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ABSTRACT

The document summarizes a two-year longitudinal evaluative study of the elementary school social studies curriculum, "Man: A Course of Study" (MACOS), which was compared with other social studies programs. The aims of the study were to examine what MACOS students seemed to learn, what they retained, and how what was learned was different from what they might have learned in other social studies courses. Data were collected from 15 school districts in 11 states. The sample consisted of 57 fifth and sixth grade social studies classes which were exposed to MACOS and 51 comparison classes which were exposed to other social studies curricula. Classes in both groups were predominantly white, non-low income, and taught by teachers with similar amounts of teaching experience. All classes were given pre- and posttests intended to measure achievement and attitude variables, such as interpretation of ethnographic data, interest in problem solving, and reaction to unusual beliefs and customs. Findings indicated that all students tended to learn most about the content of whatever curriculum they were studying and that MACOS classes did not differ significantly in attitudes toward the cultures they had studied. It was concluded that MACOS was interesting to a large number and variety of students and teachers, more effective with sixth grade students than with fifth grade students, and generally equal to other social studies courses in developing inquiry skills and interest in open-ended problems. (Author/DB)

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A LONGITUDINAL STUDY

OF

MAN: A COURSE OF STUDY

SUMMARY REPORT

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ERRATUM

On page 14 of the Summary Report (and the Summary section of Volume I of the full report), the first sentence under the heading, " Attitudes Toward Problem-Solving ", should read as follows:

On the CAPS test at posttest, the MACOS classes were not significantly different from non-MACOS classes, on the average, in interest in problem-solving, tolerance of ambiguity in problems, and perceived ability to think creatively.

PREFACE

This is the final report of a project that had its origins in a small field study of Man: A Course of Study (MACOS) conducted by Cort, et al., in 1970.* It was a conclusion of that study that it was difficult to anticipate from the formative evaluation conducted by the developers of MACOS how the curriculum would work once it became generally available to a wide variety of schools, teachers and students. It was the belief of many of the teachers interviewed that they could teach the same skills, and encourage development of the same attitudes, by other means. Yet many teachers felt that the curriculum facilitated a student-centered style of teaching, and that it stimulated interest in students which in turn enhanced the opportunity for them to develop a variety of skills and understandings. It was also the conclusion of that study that further evaluation of MACOS should be comparative, and it should be longitudinal. That is, it should systematically attempt to compare MACOS with other programs, and it should not stop with the end of the course.

The present study has followed those guidelines. It may be argued that each social studies curriculum is unique. Each program has its specific goals and particular content. Therefore, to compare programs is to compare apples and oranges. The argument is true in specifics; it is unconvincing at

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* Cort, H. R., Jr., Henderson, N. H., and Jones, C. Approaches to further study of Man: A Course of Study. Final Report. Washington, D.C.: The Washington School of Psychiatry, February 19, 1971.

a higher level of generality. At some level, and at some point, most social studies programs appear to have similar aims with respect to the mental and social development of students. In English, a course in Shakespeare has different learning outcomes from a course in Molière. Yet one may hazard the guess that both courses would have certain common underlying goals: to be able to discern the structure and techniques used by the playwright; to be able to see the relationships between the characters and situations of the play and one's own world; to be able to read other plays with deeper understanding, criticalness, and appreciation, to suggest but a few. It is in this sense that most social studies programs seem to have points in common. Certainly there is the issue of course content, and it, of course, in social studies is also related to overarching goals. It is important to gain knowledge. Much debate about content in the social studies appears to center on questions of what knowledge, when taught, how taught, toward what ends or goals.

The present study was most certainly not intended to try to answer such questions. It was intended to be descriptive, but descriptive in a context. The context is social studies in general. Thus, the study has sought to describe MACOS as it was implemented under natural conditions by a variety of teachers in a variety of settings. It has also sought to describe characteristics of MACOS in relation, not to particular alternative programs, but in relation to other programs generally. It has attempted, within the limits of resources and method, to depict similarities and differences of a limited range of course outcomes for students (knowledge, skills, attitudes, behavior), and characteristics

of teachers and classes, with those of an aggregate of other courses or programs. The alternative courses or programs came from the same school districts as the MACOS classes. Thus, we have viewed them, in the aggregate, as providing a background or form of baseline for the MACOS classes, also considered in the aggregate.

The study has attempted to explore a number of questions and issues of concern to a variety of audiences. It leaves many questions unanswered. Some questions receive only partial answers. Some questions are not answerable at all, at least within the limits of time and method of this study. The data collected can be used to explore or test hypotheses that time did not permit in this study. It is hoped that others will want to re-analyze, or analyze further, some of the data obtained by this study.

As noted, the study was intended to be descriptive, not judgmental, although inevitably values are involved in determining what and how to observe and describe. It undertook to examine MACOS and other courses as they were likely to be implemented, not as they could be implemented under special conditions of training, supervision, support and the like. Suggestions of what should be taught or how it should be taught were carefully avoided.

The difficult problem of attempting to determine what was taught, and how, was approached in three ways: by tape recording classes to provide transcripts for subsequent analysis; by means of checklists and rating scales completed by students and their teachers; and by means of repeated interviews with teachers and small groups of students from each class during the year.

None of these methods, individually or taken together, provided the detail that would have come from continuous, direct observation. Collectively they did yield substantial information about what the classes in the study did and what they were like.

The study employed pre and post tests that were intended to provide measures of selected knowledge, skills and attitudes. One instrument was based specifically on MACOS course content. Otherwise, the instruments were intended to measure skills and attitudes that seemed related to goals of MACOS and many other social studies programs. Paper and pencil tests and interviews both have limitations as observational and measurement procedures, especially with respect to some of the more complex processes that seem to be the goals of many social studies programs. Thus, views of processes and outcomes in the MACOS and other courses in this study have to be regarded as constrained by those two main filters.

The project reported here is the result of the efforts, interest and cooperation of many people: teachers, students, principals, administrators, staff, consultants and others. The project would like to express appreciation to all who participated. Districts, schools, teachers and students were assured anonymity and thus cannot be listed to receive the recognition to which they are so thoroughly entitled. It is hoped that they will find, especially in the summary of the study, that their time and effort has been to good avail.

It is appropriate also to acknowledge the role of the National Science Foundation. It was of course the granting agency. The NSF at no time attempted

to influence what was done once the study was started. It has not attempted in any way to influence findings, interpretations, or conclusions. It has encouraged the project to make its findings, both positive and negative with respect to MACOS, as readable and widely accessible as possible. Shortcomings in those regards are the responsibility of the project, not the fault of the NSF.

The study has been independent. It has of course been shaped by many considerations, methodologically as well as substantively. It has tried to maintain a perspective of issues, characteristics and concerns of the broad field of the social studies, and to examine MACOS in that perspective as well as to inquire about its unique properties.

ACKNOWLEDGEMENTS

We would like to acknowledge and express appreciation to staff and consultants.

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Secretaries

There have been a number over the period of four years, but two in particular warrant special mention. Ms. Julie Lassiter aided the project in innumerable ways during the hectic year from pretesting to posttesting. To Ms. Irene Whalen fell the task of typing and re-typing the full report, with all its tables and figures.

There have been a number of other persons involved in the various tasks of preparing and reviewing data sheets, doing tabulations, filing and compiling data, and other similar tasks. Their assistance has been much appreciated.

Group Operations, Inc., prepared computer tapes and did a number of preliminary data analyses. Mr. David Pee was the programmer in charge.

Pilot Testing

We would particularly like to express thanks to the many school, teachers, and students, especially in Washington, D.C., but also in California, Maryland, New York, Ohio, Pennsylvania, and Virginia, who assisted in testing, and re-testing, various instruments and interviews employed in the study, and in providing the data needed to scale items on one of the instruments.

Consultants

A number of consultants have contributed to the project at various times, to different extents, and in various capacities. Some now have positions other than those indicated below. Some will be mentioned twice for reasons that will be clear.

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This panel helped conceptualize and focus the original study design, from which the present study derived.

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The following have been the continuing advisers and consultants to the project. They have contributed centrally to the focus, design, analysis, and interpretation of the study. Its good points reflect their thinking, advice and assistance. They are not, of course, responsible for its limitations.

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Finally, we would like to express special thanks to Ms. Elizabeth C. Cort for the countless hours and days of time she gave voluntarily to help the project, and for her unflagging encouragement.

H. Russell Cort, Jr.

Nancy Peskowitz

INTRODUCTION

The following pages contain a summary of the project. They also contain interpretations, where they appeared to be useful, and conclusions.

This summary is intended to serve two purposes. It is included at the beginning of the full, final report of the study to provide the reader with an overview of what to us appear to be the main findings of the study. The summary is also intended for separate distribution to a wide variety of audiences that may have neither the time nor the inclination to go through the full report. It is thus written principally with such audiences in mind. Technical details have been avoided, although we have tried to make clear the bases and limitations of concluding statements. Because the summary serves a dual purpose, it contains some background description material that is also contained, although in more detail, in the full report.

The summary starts with a brief description of the project. The next section presents major outcomes or findings, particularly with respect to achievement and attitudes of students. Following that is a section dealing with characteristics of the two groups of classes in the study: the MACOS group, and the comparison non-MACOS group. This section includes a report on interrelationships among major groups of variables that were examined in the study. That is followed by a section on the MACOS and non-MACOS teachers. Finally, there are concluding remarks.

BRIEF DESCRIPTION OF THE STUDY

This is a summary of a two-year study of Man: A Course of Study (MACOS), as it was taught in 57 fifth grade, sixth grade, and 5/6 non-graded classes during the 1974-75 school year. The classes were in 15 school districts in 11 states.* There were 51 comparison classes in the same districts at the same grade levels. Most districts were suburban; some were urban and rural.

The districts and classes in the study were not random samples. They were districts and classes that met certain criteria for inclusion in the study, and that agreed to participate. The districts were originally recruited by means of a questionnaire sent to all public school districts. An aim of the study was to have only one class (MACOS or non-MACOS) per school within a district. That aim was not always met. With two exceptions, however, MACOS and non-MACOS classes did not come from the same schools.

The aims of the study, broadly stated, were to examine what MACOS students seem to learn, what they retain, and how what was learned was different from what they might have learned otherwise. MACOS is one of the more elaborate developments of the "new social studies" projects of the 1960's. It was originally designed as a one-year course for upper elementary children. It appeared to combine the content and methods of behavioral science with a humanistic orientation towards education. It was an attempt to embody in a curriculum the concept of the structure of a discipline. That is, it was based on the premises

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* California, Colorado, Florida, Illinois, Iowa, Nebraska, New Jersey, Pennsylvania, Oregon, Virginia, Washington.

that: 1) disciplines have an underlying structure (set of principles, relationships, assumptions, etc.); 2) the structure serves to organize the myriad of available facts and information, and to stimulate further inquiry; 3) the structure can be grasped in some form by students of almost any age; and 4) grasping the organizing structure is an aid to effective learning and a motivating force for further learning. The curriculum was thus built on the "spiral design" in which certain concepts and principles are introduced in simple form, and elaborated in greater complexity and scope as further principles and conditions are introduced.

The goals of MACOS are broad and not easily translated into specific operational terms. The curriculum attempts to embody certain principles of learning formulated by Bruner. It provides the opportunity for information to be obtained in many ways, e.g., from written materials, films, records, games, discussions. It seeks to encourage students to learn together, and to interact with each other, as a motivating device. It encourages teachers to take a problem-solving role rather than a lecture or question-answer-question approach to teaching. It encourages multiple approaches to the presentation of topics, and thus tries to influence teachers to adapt to the various interests and abilities of their students. It seeks to command interest in students by authenticity or realism; it is as concerned with <u>how</u> things are learned as with <u>what</u> is learned (process is as important as product). It has a hierarchy of concepts, but it is not designed on a behavioral objectives model, or on a hierarchy of behavioral objectives.

MACOS thus was an ambitious and interesting curriculum from a number

of points of view. It has stimulated controversies almost from its inception. It was pilot-tested extensively, and an elaborate formative evaluation was conducted. Questions remained, however, about what would happen when the curriculum became generally available. As one alternative program among which schools can choose, how does it seem to work? What is different about MACOS from other programs? What is similar? Is there evidence that it achieves its goals? If so, with whom? Under what conditions? What is the consequence to students of taking MACOS for a year? What, in fact, is a MACOS program?

These questions are broad. The present study was intended to examine MACOS classes as taught by a variety of teachers in a variety of settings. It has undertaken to examine the effectiveness of MACOS with respect to achievement and motivation. It has sought to explore what teachers and students see themselves as doing in MACOS, and why. The basic method has been comparative. The study has been primarily descriptive. It has attempted to delineate a number of similarities and differences of MACOS, compared to a variety of programs that students might otherwise have had. It has essentially asked: if one implements MACOS, what are some of the results in classroom processes and student learning that one can expect, and how, on the average, are they similar to and different from those of an aggregate of other programs?

It was not the purpose of the study to compare MACOS to other particular curricula, nor were other particular programs sought as comparison classes. Thus, the group of classes called non-MACOS was a collection of a number of

different programs. The non-MACOS classes differed among each other, and from MACOS classes, with respect to specific content. There were many commonalities, however, within and between the groups of classes with respect to broad objectives, methods, problems and contexts. Indeed, except for specific content and specific content-related objectives, there were no variables or characteristics examined in this study that were unique to all the MACOS classes or to all the non-MACOS classes. While there were significant differences between the MACOS and non-MACOS groups of classes for some classroom process (what was done), climate (what students thought of classes), posttest and follow-up variables, there was no variable on which all MACOS classes were better or worse, higher or lower, more or less, than all non-MACOS classes.

Since an aim of the study was to examine MACOS and non-MACOS classes as they were likely to be taught under natural conditions, no requirements were set for what should be taught, or how. Indeed, every effort was made to avoid suggesting what teachers should do or cover.

Methods

MACOS and non-MACOS classes were given pretests and posttests intended to measure selected specific and general achievement and attitude variables. Pretest instruments were also administered to teachers. *

* Two of these were Kerlinger and Pedhazur's Educational Scale VII, and Pedhazur's Teachers at Work scale. Both were intended to provide measures of progressive and traditional attitudes toward educational practices and goals.

Random samples of students from each class were interviewed at three different times during the year; teachers were also interviewed at those times. A tape recording was made of each class, and the transcripts of a random sample of classes from each group were analyzed using the Aschner-Gallagher system for analyzing convergent, divergent, and evaluative thinking questions.

Shortly after midyear, classes completed a series of rating scales, adapted from Joe M. Steele's Classroom Activities Questionnaire. The scales were intended to provide measures of classroom activities and emphases (processes) as perceived by students. There were also scales of classroom climate (satisfaction, apathy, difficulty), again as perceived by students. The climate scales were from Walberg's My Class, and Anderson's Learning Environment Inventory. At the same time, teachers completed ratings of the frequency of activities, and of curriculum emphases in their classes. District coordinators provided information about the schools involved in the study, about the districts, about procedures and policies for selecting social studies and other curricula, and about the ways in which MACOS and other social studies curricula had affected the school system. The following year, they also provided some information about costs.

During the next school year (1975-76), two follow-ups were made with a 50% sample of students from each previous class. Follow-up sampling was limited to students who had been in the previous MACOS or non-MACOS class for the entire year. The first follow-up was made in October, and the second one in May, a year after MACOS. Paper and pencil instruments were administered each time. In addition, a group discussion was held with each class in the first follow-up. In the final follow-up, some instruments that

had been given pre and post the preceding year were readministered.

The pre - post instruments were:

Achievement

A Questionnaire About Animals and People (AP), which contained questions from (or modified from) the MACOS formative evaluation, and the MACOS Evaluation Strategies booklet. Part of this test was included in the second follow-up.

Sequential Tests of Educational Progress (STEP), Social Studies (Series II, Form 4A), a standardized test of social studies skills and knowledge.

Interpretation of Data Test (IDT), a test, developed for the Taba program, of ability to interpret and use ethnographic data.

Attitudes

Study Choices (SSCh), a pair-comparison instrument in which preference for social studies was indicated individually in relation to math, science, English, spelling and reading (scored here by counting the number of times social studies was chosen). A modified version was included in the second follow-up.

What Would You Think, Part A and B, (WWA, WWB), which asked students to indicate their reactions to unusual, hypothetical beliefs, customs or behavior (Part A), and

toward persons or groups that would have such beliefs, customs or behavior (Part B). This instrument was repeated in the second follow-up, along with two additional items of a similar kind.

Children's Attitude Toward Problem-Solving Inventory (CAPS), developed by Martin Covington at Berkeley, and scored here for four separate scales derived from a factor analysis: interest in problem-solving; ability to solve problems; tolerance of ambiguity in problems; and creativity in thinking or problem-solving.

Major analyses of results were of two kinds: comparisons of differences between MACOS and non-MACOS classes as groups, and examinations of relationships among variables. In both cases, the unit of analysis was the class, i.e., the individual measures were class means. Class means were based on scores from students who had been in a class all year. Some item analyses, and analyses of certain opinions, were also done using the individual student as the unit of analysis. The distinction is important, since results based on class means do not necessarily apply to individuals, and results based on individuals do not necessarily apply to classes.

MAJOR OUTCOMES

Variation in Implementation

One of the most striking features of the MACOS classes in this study was the variation in implementation. The total amount of time spent on social studies as a whole was similar in both MACOS and non-MACOS groups. The average was about 3¼ hours per week for 27 to 30 weeks. The percentage of MACOS lessons actually taught by the time of posttesting, however, ranged from 16 to 100%. The typical pattern was to supplement MACOS with other lessons or programs. While teachers did not reverse the order of lessons, they would often omit one or more lessons. Some teachers said they found that MACOS seemed particularly suited for branching into other units or lessons. They felt that such flexibility was a strong point. There were classes in the study that were straight MACOS classes. But if the MACOS classes in this study are at all indicative of how the curriculum is implemented in general, one would have to conclude that diversity of adaptation is the prevailing mode.

Achievement Outcomes

Despite this diversity of implementation, MACOS classes did learn similar content. MACOS classes scored significantly higher than non-MACOS classes, on the average, on the MACOS-specific test given at posttest, and on a sub-part of it given again a year after the course.* Periodic interviews with students confirmed the development of detailed course knowledge, just as

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* Throughout this report, the .05 level of chance is used as the criterion of significance of a difference or a relationship.

they did with students in non-MACOS courses.* Students obviously did tend to learn what they studied rather than something else. However, an analysis of items on the MACOS posttest suggested that, at least as measured by the test, the learning was most effective with facts and terms, and least effective with some of the more abstract concepts of the course such as structure, function, and language. At posttest, sixty-two percent of MACOS and non-MACOS students alike classified "human being" as "the opposite of animal," when the choice considered correct was "a mammal and a primate." Since performance on the part of the test covering such abstract concepts was significantly related to the age of students (sixth grade MACOS classes tended to do better than fifth grade classes), it seems reasonable to conclude that the course was generally more appropriate for older students insofar as mastering the more abstract concepts and relationships is concerned.

On more generalized tests of social studies skills (i.e., on tests that were not curriculum-specific), taking MACOS neither helped nor hindered classes, on the average. For example, there were no significant differences at pretest or at posttest between the MACOS and non-MACOS groups of classes on the STEP Social Studies test (Series II, Form 4A). The same was true of performance on the Interpretation of Data test (IDT). In an experiment conducted by the Antioch study shortly after midyear, groups of four students from each

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* All interviews with students, except in the first follow-up, were conducted with a random sample of four students from a class. The students were interviewed as a group. Interviews were taped, and transcripts were coded by three readers working independently. If at least one student in the group mentioned a topic or a reaction, that response was counted as pertaining to the whole class. Thus, interview results are typically stated in terms of classes.

class, chosen at random, were asked to compare two scenes, one historical (early America) and one modern, and to speculate on similarities and differences of the problems faced by the two groups of people. We found no differences between MACOS and non-MACOS groups in quality or quantity of hypotheses proposed, on the average, nor in a tendency to test or explore proposed hypotheses. The latter was regarded as an indication of constructive, problem-solving interaction among students. There was great variation in sophistication and productivity among the samples of students both in the MACOS and non-MACOS groups. Other interview material, during the course and in follow-up, gave no suggestion that there were differences between MACOS and non-MACOS groups in their understanding or use of inquiry skills, although again there was much variation within both groups.

Development of inquiry skills was said to be a part of the social studies program by nearly all teachers. Such skills, when described by teachers in interviews, included questioning or analyzing what was seen, read or heard, forming hypotheses, gathering information, evaluating information, drawing conclusions, making generalizations. Teachers described different methods of developing such skills. In interviews, students rarely used spontaneously a vocabulary suggestive of the elements of an inquiry methodology. Students in different classes described how they would compare things: how they would discuss questions over which there was disagreement; how they would go back to references (books, films, etc.) to resolve disagreements, which were typically over the correctness of asserted facts. On questions of opinion or belief, students described having a discussion to hear different points of view,

or taking a poll (during the class). Teachers typically said they guided such discussions, trying to make sure that different points of view were heard (depending on the subject, the class, and the teacher), and would sometimes assign students to look up, and to report on, a topic or subject over which there was disagreement or uncertainty.

The data of this study do not provide systematic information about the development of inquiry skills, or of organizing models or techniques. Such data as the study obtained, from paper and pencil instruments, interviews, and a special problem-identifying experiment undertaken with students during an interview period, suggest that: 1) such developments are not usually articulated by students; 2) there is great variability of development from class to class and within classes; 3) there is need for much more subtle and extensive methods of observation and assessment than this study was able to employ in order to assess such developments reliably in the social studies. Perhaps the development of inquiry skills and conceptual models in young children is similar to the development of language. They develop; then later one learns to name, describe and analyze the elements, rules and principles for what one has been doing all along, as well as to improve upon the process. It did seem, however, that an attempt to provide students with a vocabulary and statements of objectives for classifying and analyzing situations and problems, as well as much guided practice, would be helpful. If the former were done systematically in the classes in this study, we failed to detect it.

Analysis of tallies of data from interviews with teachers and students

indicated that non-MACOS students were much more likely than MACOS students to be exposed to training in specific skills (how to make maps, how to read them). Some MACOS teachers, however, incorporated special units on such skills. Students in different classes reported learning various how-to-do-it skills -- e.g., how to make an igloo, how to make a piñata. Non-MACOS classes, more than MACOS classes, were likely to describe writing reports as a recurring activity. Thus, non-MACOS students, on the whole, had more opportunity to practice skills involved in that task.

Teachers in both groups of classes (MACOS, non-MACOS) sometimes had particular problems teaching students how to work cooperatively in small groups on a task or assignment. Some teachers gave up and reorganized the management of instruction. Others invested unanticipated amounts of time and effort to help students learn to work cooperatively and constructively together. It is impossible to say from the data of this study what the success of such training was, or to what extent whatever learning took place transferred to other situations.

In sum, students did tend to learn much about the content of whatever they were studying. The details described by them in interviews tended to be about facts. Students would use the vocabularies of their particular courses with varying degrees of accuracy and appropriateness. They would describe what animals or people did: they would describe customs; they would often give reasons for how, or for why, things were done as they were in different countries or cultures; they would make comparisons; they would make judgments.

Within any class, of course, there was a range of mastery and comprehension, even of factual material.

Attitudes Toward Problem-Solving

On the CAPS tests at posttest, the MACOS classes were significantly different from non-MACOS classes, on the average, in interest in problem-solving, tolerance of ambiguity in problems, and perceived ability to think creatively. Non-MACOSclasses tended to score more positively, on the average, than MACOS classes on perceived ability to solve problems. There was indication in the MACOS group that more interest in problem-solving tended to go along with more complete implementation of the MACOS curriculum. MACOS classes may have stimulated more positive perceptions or attitudes about problem-solving in individuals, but comparisons of class averages between groups did not suggest a systematic effect for three of four of the measures used. It is concluded that the MACOS classes in general did not stimulate confidence in the powers of one's mind significantly more than the aggregate of non-MACOS classes. Indeed, the MACOS classes tended to have comparatively less positive perceptions of ability to solve problems. *

Attitudes Towards Different People and Customs

On the instrument (What Would You Think) intended to measure students' attitudes towards or reactions to unusual, hypothetical customs, beliefs and behavior, as well as to peoples or groups that might have them, there was tentative indication that MACOS classes on the average reacted more positively

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* The computed reliabilities of the CAPS sub-tests for class means (but not for individuals) were extremely low. It is possible that re-anaysis, based on types of individuals, would yield different conclusions.

to the customs or beliefs at posttest than the non-MACOS classes. There was, however, no significant difference between the two groups of classes on that measure a year after the course. With respect to reactions to groups of people who might have such customs or beliefs, differences between MACOS and non-MACOS classes fell short of significance at posttest. There was marginal indication that MACOS classes tended to react more positively toward people who might have such customs than non-MACOS classes, on the average, a year later (the data were from a random 50% sample of students from each former class). These results are called tentative or marginal for several reasons, one being that the computed reliability of the instrument was very low, even for class means. We interpret the results to suggest that there can be influences of MACOS on reactions of classes to strange or unusual customs or beliefs. The influences may be small and transient; they are nonetheless suggestive in that they at least seem consistent with MACOS goals. More extensive and reliable measurement would provide clarification.

In interviews with students we found no systematic indication of differences between MACOS and non-MACOS groups of classes in general attitudes toward the cultures or countries they had studied. Students, if they were not bored with the whole matter, tended to see both positive and negative points about whomever or whatever they studied. Students in both groups were most likely to feel negatively about customs or practices they saw as unfair, cruel or exploitative. MACOS students, aside from being appalled at (or intrigued by) the Netsiliks' eating preferences and habits, were apt to be

dismayed at their treatment of animals, at the manner in which they killed animals, at their treatment of the elderly. Aspects of the Netsilik culture that students admired were their conservation practices (making maximum use of available resources and not wasting anything, not polluting the environment), and the atmosphere of closeness and caring created in families (a number of students also envied the Netsilik children not having to go to school). Non-MACOS students were similarly negative about practices they had learned about that seemed unfair, cruel or exploitative (human sacrifices, pre-arranged marriages, slavery, treatment of Indians by early Americans, poverty -- to name a few topics given by students). We found no students giving any indication that they would want to trade places with the Netsilik: no one appeared to have developed a desire to eat fish eyes. Two MACOS students, out of over two hundred interviewed, mentioned that the act of abandoning the old woman on the ice was desirable in the sense of being necessary for group survival. Most students who mentioned that event at all thought some other solution should have been found. Most students who mentioned Netsilik customs such as putting ashes on fishes' eyes seemed to regard them as interesting customs, but in the nature of superstitions. Many students in both groups, MACOS and non-MACOS, when mentioning a custom that was different from ours, but not seemingly cruel or unfair, would add statements to the effect that "they have their ways, we have ours."

In sum, nearly all classes in both groups, when interviewed at post-

test, felt they had learned about customs, beliefs or the way people lived that seemed strange. The majority of classes in both groups felt they had learned about customs or ways of life they thought were wrong. Finally, the majority of MACOS and non-MACOS classes cited examples of customs, beliefs or ways people live about which they had learned that seemed commendable.

Attitudes Toward Vivid Topics in Retrospect

In an attempt to assess continuing opinions of or attitudes toward potentially vivid or controversial topics students may have studied, students were asked on questionnaires twice during the year following MACOS if certain topics had bothered or upset them. In the final follow-up at the end of the year, the two topics that a small fraction (at most, 11%) of MACOS students (not classes) continued to indicate had botheredthem were 'killing animals' and 'leaving people to die,' if they also continued to say they had learned about such matters in social studies the year before. There were also small fractions of former non-MACOS students a year later who still indicated they had been bothered or upset over certain topics (e.g., slavery) that they had studied the year before.

Students were of different opinions about the suitability of various topics for their age group to study. The main themes expressed (if not a flat yes or no about suitability) in interviews with both groups were that students should have options, and that much depends on how the teacher handles a topic. If the teacher made an effort to treat a topic seriously, not to respond to sensational aspects, and to help students see the various implications, students felt that otherwise emotional or vivid topics could be handled constructively

by most people their age.

In follow-up interviews with 50% samples of students from each class conducted in October the next year (five months after MACOS), students were asked if they could remember anything that upset or excited the class. A far greater percentage of MACOS classes (77%) than non-MACOS classes (11%) gave examples we categorized as gory customs or behavior of animals. For MACOS students examples of these were typically what the Netsilik ate and how they ate; how they killed and skinned animals; baboons tearing food apart; herring gulls regurgitating food for their chicks. For non-MACOS classes examples included bull fights, cannibalism (the plane crash in the Andes), and human sacrifices. Classes in both groups mentioned topics falling into the categories of exploitation of people (e.g., slavery), and cruelty.

Subjects or events that were recalled as particularly exciting by MACOS classes included making igloos, games, going on an archeological dig, films (especially on salmon, and on the family life and social organization of baboons), and discussions. Non-MACOS classes recalled excitement over making dioramas, pottery, piñatas, Russian and Japanese life styles, field trips, group work and projects, discussions and debates.

A greater variety of other negative topics or events was recalled by non-MACOS than MACOS classes. These included: crime, a movie on sex, debates over money made by athletes, Vietnam, bussing, hunger and starvation in other countries, pollution, voting, fish-bowling sessions (personal questions), conditions in ghettoes, conditions in coal mines. Some MACOS classes men-

tioned that the class was upset over matters such as: MACOS was boring, Eskimos all sleeping together on a platform, the teacher asking personal questions.

It may be noted that no statement can be made from the data of this study about psychological impacts, short-term or long-term, positive or negative, of MACOS or any other program. The data show that there were topics or situations that some students reacted to strongly. They also show that fifth graders in both groups were more likely to react more strongly than sixth graders to vivid scenes or situations on questionnaires and in interviews.

Social studies, perhaps more than other subjects, does have the potential for engaging in important issues and evoking strong reactions.

Attitudes Toward Classes During the Course

MACOS affected attitudes toward classes. Midway through the year, three measures of classroom climate (satisfaction, apathy, and difficulty), based on students' ratings, were obtained. MACOS classes, on the average, compared to non-MACOS classes, had significantly more positive ratings on all three measures. The three measures were highly intercorrelated. Thus, a conservative interpretation is that MACOS classes, on the whole, tended to like their social studies course more than non-MACOS classes tended to like theirs. There was, of course, a distribution of such reactions in both groups. Some non-MACOS classes were far more positive than some MACOS classes. The averages, however, favored the MACOS group of classes.

Attitudes Toward the Course in Retrospect

The following year (in October), former MACOS classes were significantly more likely, on the average, to find their present social studies program

less interesting, compared to the previous year, than former non-MACOS classes found theirs. Considering the variation in amount of implementation of MACOS per se, at least some of that reaction must, of course, have had to do with the teacher and with how the course as a whole had been conducted. A year after taking MACOS, former MACOS students tended to give more positive recommendations about MACOS than former non-MACOS students gave about their prior courses. Former sixth grade (the older students) MACOS students were more positive than former fifth grade MACOS students. This again suggests that MACOS tended to be more appropriate for older students with respect to interest as well as achievement.

In the first follow-up, former MACOS classes were less likely than non-MACOS classes to feel they had missed some content (topics, subjects) that would now be useful to them in social studies. The topics that appeared to stand out for non-MACOS students had to do with animal behavior, and with similarities and differences in ways animals and people behave. There was some indication from MACOS students that learning about the history and customs of the United States and other countries would have been advantageous to them in their present programs.

There was some indication from former MACOS students in the first follow-up that some students would have found it advantageous now in social studies to have had more opportunity to learn how to make or use maps, how to make or use graphs, how to find information in the library, and how to write reports. When class averages of ratings of the present advantage of having

learned these and other skills were considered, the differences between the MACOS and non-MACOS groups were marginal, but still suggestive of the tendency just described.

Students from the former MACOS and non-MACOS classes were asked in an interview, in the first follow-up (October), to describe what they missed from last year's social studies class. The predominant response from classes in both groups was group work, projects, and art work (MACOS, 58%; non-MACOS, 56%). There were major differences, however, in the percentages of classes in the two groups mentioning other categories of things that were missed. Forty-four percent of the MACOS classes mentioned missing the course content, or what they had learned or read about (compared to 9% of the non-MACOS classes). Forty-four percent of the MACOS classes, compared to 13% of the non-MACOS classes, also mentioned films they had seen. And 31% of the MACOS classes, compared to 9% of the non-MACOS classes, mentioned missing games and plays. Equal percentages of classes agreed that they did not really miss anything from last year (MACOS, 12%; non-MACOS, 13%).

Discussions were mentioned by 39% of the MACOS and 33% of the non-MACOS classes. Discussions were more likely to be mentioned in both groups by former sixth grade than fifth grade classes. MACOS fifth grade classes, however, were much more likely to mention missing the games and plays, as well as course content (what they had learned), than MACOS sixth grade classes. MACOS sixth grade classes were more likely to mention group work, projects, and art work than MACOS fifth grade classes. Both grade levels of MACOS

classes mentioned the films equally frequently.

These results strongly suggest the vividness that MACOS had for many students. The content stood out in mind, as well as some aspects of the methodology. But they also give further indication of grade level differences in reactions to the course. The older students (former sixth graders), for example, seemed to have been more challenged and engaged by discussions, on the whole, than former fifth graders, if one uses retrospection as an indicator. The same relationship occurred in the non-MACOS group of classes, although not as markedly. The greater stimulation of discussions for sixth grade classes may have been because it was a more frequent activity than it was for fifth grade classes. But there may well also be a maturation factor involved.

Attitudes Toward Social Studies in General

MACOS seemed to have a temporary effect on attitudes toward social studies in general. MACOS classes, on the average, scored higher at pretest, than non-MACOS classes in preference for social studies, compared to other subjects. MACOS had already started when the pretest instrument was given. Results may have reflected initial enthusiasm for a different course. The attitude of MACOS classes at posttest, once pretest was taken into account, was not significantly more positive, on the average, than non-MACOS classes. A year after the MACOS and non-MACOS courses, there were no differences in any sense between former MACOS and non-MACOS classes on this measure. Both groups of classes, a year later, had slightly positive attitudes, on the average, toward social studies when asked to rate how much they liked it for itself, not in comparison to other subjects.

Attitudes Toward Social Studies Compared with Other Subjects

It was found that during the year students took MACOS, sixth grade MACOS students showed a greater relative increase in preference for social studies, compared to other subjects, than fifth grade students. This is taken as further indication that MACOS tended to be more appropriate for sixth graders than for fifth graders. For both groups and grade levels except MACOS sixth graders, social studies started and ended ranking fifth in preference (after arithmetic, science, reading and spelling). Only English consistently ranked lower in comparative preference. For MACOS sixth graders at the end of the course, social studies ranked fourth, followed by spelling and English. (For all groups of students, reading and arithmetic tended to be the preferred subjects, both pre and post, when students had to choose, with science running a close third). The general conclusion is that, while students did not, on the average, positively dislike social studies, social studies ranked low in preference when compared with other courses. There was evidence of a temporary increase in preference for social studies among MACOS students, particularly sixth grade ones. By the measures and methods of this study, there were no general enduring effects on attitudes of classes toward social studies beyond the year of the course, although, as has been noted, former MACOS classes, on the average, found the next year's class less interesting by comparison than former non-MACOS classes.

Relevance of Social Studies

We found, from interviews with students, no general differences between MACOS and non-MACOS classes, on the average, in what they thought was important

about social studies, or why they should study it. The prevailing opinions had to do either with an immediate personal advantage ("because it's interesting to know") or a personal long-term advantage ("so if you are ever in a country, you'll know how to act," or "so we can tell our children"). * Relatively few students mentioned scholastic necessity as a reason. Social studies educators may call the personal advantage reasons "appreciations." The term that struck us was "consumerism." Consumerism in this context means when students gave a reason for the importance of studying social studies, they tended to cite examples having the following characteristics: it is interesting to know now, and it may be useful to know some day, either personally or for informing one's children.

Despite the competing influences of television, books, movies and increased travel opportunities, we were convinced from interviews with students, that many (though of course not all) found subjects presented to them inherently interesting, no matter what the subject. Authenticity seemed important, whether it concerned Greek myths, or Netsilik boat-making procedures. Currentness also was important to many students. For example, some students, on reflection five months following a course, would state matters in terms of connections with current life or events ("almost nobody stops you on the street to ask you, for example, about the (Netsilik) or the (Micmac Indians)"). ** Such students appeared to want to be abreast of what was currently newsworthy or seemingly relevant to

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* Not literal quotations.

** Again, not direct quotations, but the gist of some statements.

their lives. Schools, however, could compete with other sources of information with many fifth and sixth grade students in terms of engaging interest and attention in virtually any subject.

Analysis of interview data showed that in MACOS and non-MACOS groups alike, social studies had an influence particularly on television viewing. MACOS classes were far more likely to pay attention to animal programs (e.g., Jacques Cousteau); non-MACOS classes were far more likely to report watching historical (or contemporary) dramas that were related to what they were studying. It was television viewing, more than any other source outside school, upon which social studies in both groups (MACOS and non-MACOS) seemed to impact, according to interviews with students.

There was little evidence that social studies as seen in this study produced or attempted to produce social activism. Non-MACOS, more than MACOS courses, appeared to impel classes in this study to action. Of the two classes in the study that actually went out and tried to take concerted action based on what they had learned in social studies, both were non-MACOS classes. The precipitating issue was the problem of abandoned animals as presented by the SPCA.

Students of course did talk about social studies outside school. According to analyses of interviews conducted in November/December, two months after pretest, students in both groups were most likely to talk about social studies with parents, friends, and siblings, in that order of frequency. Surprisingly, however, the samples of students in 34% of the classes in both groups said they did not talk with their parents about social studies at all.

When students did talk about social studies, the predominant subject was, of course, what they were learning in school: facts, information, generalizations, etc. Typical discussions appeared to be descriptive, or a sharing of information. Students from both groups would also mention discussions that we classified as discussions of issues, debates, and arguments over values or opinions. Discussions of this kind were mentioned at least once in 58% of the MACOS classes and 37% of the non-MACOS classes.

Students in both groups mentioned hearing people talk about things that reminded them of what they were studying in social studies. The examples given were curriculum specific. MACOS classes were far more likely to mention animals; non-MACOS classes were far more likely to mention history, historical figures, countries, customs, etc. Somewhat more MACOS than non-MACOS classes cited news, current events, elections, politics, social issues as something they heard talked about outside school that reminded them of social studies.

Finally, students in classes from both groups often could describe doing something outside school because of what they had learned or studied in social studies. Activities included seeking further information (reading, looking at exhibits in museums): doing something that drew on knowledge or skills related to social studies (e.g., making a map for a game): or doing or seeing things initiated by others (family, scouts, etc.).

The implication of the foregoing is clear. There were many linkages perceived by students between what they studied or did in social studies in school and what they saw, and heard, and did outside school. The sense gained from

students' examples and descriptions is that social studies tended typically to serve both as a supplier of information (and, to a lesser extent, skills, such as making or using maps) that enabled many students to feel that they had something to contribute to general or adult discussions or activities, and as a pointer that led students to attend to subjects, events, or details that might otherwise have passed unnoticed. The data do not allow inferences about what students made of what they learn, how they interpreted it, or what cognitive or value systems were developing.

CHARACTERISTICS OF THE TWO GROUPS OF CLASSES

We turn now to the characteristics of classes in the MACOS and non-MACOS groups. The three questions of interest in this study were: were there differences between MACOS and non-MACOS classes? to what were they related? did they have any relation to outcomes?

Initial Characteristics of Classes: Inputs

There were not significant differences between the two groups of classes, on the average, with respect to pretests of achievement or of attitudes (except for preference for social studies, as noted earlier). Nor were there differences between groups in the demographic characteristics or composition of classes. Both groups included classes covering a range of demographic compositions and sizes. The typical class in both groups, however, was predominantly white and non-low income.* The groups were similar with respect to the amount of teaching experience of teachers. There were indications of differences between the two groups of teachers with respect to educational philosophy (non-MACOS teachers tended to score higher on the average than MACOS teachers on a measure of traditionalism, but the groups were similar on a measure of progressivism),** and on the apparent importance of different

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* The indicator of the economic status of a class used here was the percentage of students not eligible for the free lunch program.

** Traditionalism, given the items on the Educational Scale VII instrument, means a tendency to favor discipline, authority of the teacher, mastery of content, learning organized around subject matter, competitiveness. Progressivism means a tendency to favor problem-solving over content, development of good attitudes, individualization, gearing learning to students' interests and life experiences, interaction of students. In general, traditionalism here suggests

broad categories of social studies objectives. MACOS teachers were more likely than non-MACOS teachers to consider a wide range of objectives as important. However, when all measures of pretest, class characteristics, and teacher characteristics were considered together, differences between the MACOS and non-MACOS groups of classes did not approach statistical significance. It was concluded that the two groups could be considered comparable at the outset with respect to the cluster of variables employed. This average similarity of groups, however, should not be taken to diminish or obscure the diversity of classes within each group.

What Was Done in Classes: Processes

According to ratings made shortly after mid-year by students and by teachers, there were differences between groups in perceived emphasis on or frequency of certain kinds of activities and other characteristics (called "processes" in this study. There did not appear to be differences between groups in other activities and emphases. On the average, the MACOS classes, compared to the non-MACOS classes, were rated by students as:

- giving more emphasis to comparing things to see how they are alike or different;
- putting less emphasis on grades;

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a more authoritarian, work-oriented approach build around subject matter. Progressivism suggests a more democratic, problem-solving approach, built around life experiences, the development of positive attitudes, and individual needs and interests.

- having more emphasis on discussion
- involving more frequent talk by the teacher
- putting less emphasis on synthesizing activities (e.g., making up new things from what was learned such as stories, poems, plays, reports, etc., or thinking up new ideas or examples).

The two groups of classes did not differ significantly in perceived emphasis on:

- memory (e.g., in social studies, our teacher really makes us remember the names, new words, and facts that we have learned);
- translation (e.g., our teacher always wants us to tell about things in our own words in social studies class);
- interpretation (e.g., it isn't enough just to learn facts in social studies; our teacher also wants us to decide what the facts mean to us);
- application (e.g., the things we do and learn in social studies really help me a lot in other classes and outside school too);
- analysis (e.g., in social studies, we always have to study all the parts or sides of a question before we decide what we think);
- evaluation (e.g., in social studies, we often have to decide if things in the world are good or bad, or right or wrong, and tell why we think so).

The two groups also did not differ significantly, on the average, on ratings by students of the appropriateness of the pacing of the class (going too slowly, or too fast); of the extent of listening done; and of degree of informality or joking.

With all the ratings of process (and classroom climate) characteristics by students there were variations in ratings between students within a class. When the student ratings were averaged to produce a "score" or average for the class, there were variations among classes within the MACOS and non-MACOS groups. The similarities and differences between groups reported here refer to average similarities and differences in the average of class means for the two groups of classes as a whole.

MACOS teachers, significantly more than non-MACOS teachers as a group, rated their curriculum higher in emphasizing affective content, application, analysis, and synthesis. They rated their curriculum less in emphasis on comprehension; and similarly to non-MACOS teachers, on the whole, in emphasis on memory, evaluation, group activities, and individual activities.

The emphasis perceived by students on comparing and on discussion, and the comparative lack of emphasis on getting good grades, are three characteristics that appear consistent with MACOS design goals and philosophy. That MACOS classes, compared to non-MACOS classes, saw the teacher as talking more, and as having less emphasis on synthesis activities, are results which do not seem consistent with MACOS design goals and philosophy. To the extent that the ratings made by students were valid indicators of typical emphases or characteristics,

the results suggest areas that may be of interest for teachers, supervisors and others to consider in program planning and staff development.

Direct and repeated observations of classes could have helped clarify some of these results. The limited observational data that could be obtained and analyzed are at least suggestive. A random sample of transcripts of MACOS and non-MACOS classes, taped in November/December two months after pretest, was analyzed, using the Aschner-Gallagher coding system. Only teacher statements and questions were coded. The samples were small (9 MACOS and 10 non-MACOS classes), and so the lack of statistical difference in results was not unexpected. However, the average frequencies of types of statements and questions in both groups of classes were very similar. Other than statements having to do with classroom routine, the predominant type of statement or question had to do with cognitive memory. The next most frequent type of statement or question was classified as convergent thinking -- directed toward a single answer or point. Divergent thinking and evaluative thinking questions were relatively infrequent in both groups. There was indication that cognitive memory questions were a little less frequent, and evaluative thinking questions a little more frequent in the MACOS sample than in the non-MACOS. The average number of teacher questions and statements was slightly greater in the MACOS than in the non-MACOS sample.

These results, which of course apply only to a single class period, and only to a small sample of classes in each group, nonetheless have interesting implications. One reason why there may not have been differences between students' perceptions of emphases in MACOS and non-MACOS groups of classes

with respect to memory, translation, interpretation, analysis, and evaluation is that there may not have been substantial differences, on the whole. In light of the fact, however, that there were average differences between groups in classroom climate, and in perceived emphasis on grades, and on discussion, it is possible that the same types of emphases or activities were carried out differently in the two groups, and thus were reacted to differently by students. It is also possible that the content of MACOS tended to help make otherwise similar processes have a different effect on the attitudes of students towards the class.

A second implication of the results of analyses of the samples of class transcripts is related to the similarity in development of inquiry skills that seemed on the whole to characterize the two groups of classes. If underlying methods and emphases were in fact similar, on the average, it would not be surprising that, as has been seen, the development of resultant inquiry skills would be similar, and that attitudes towards ambiguity in problems or interest in problem-solving would be similar.

Results of Variations in Amount of Implementation of MACOS

How did variations in amount of implementation of MACOS (e.g., percentage of lessons taught, amount of time spent) affect outcomes? Analyses, using class means, were made of the MACOS classes for the two parts of the MACOS test (Man and Other Animals; Netsilik) at posttest, and for the Man and Other Animals part in the second follow-up, a year after MACOS. The results were that: 1) pretest class means on the Man and Other Animals sub-test was the most significant predictor of posttest performance in all three cases; 2) pretest scores on the Netsilik part of the test was not a significant predictor

of performance in either sub-test at posttest, or for the sub-test used a year later; 3) the percentage of Man and Other Animals lessons taught was not a significant predictor of performance in any of the three cases; 4) the percentage of Netsilik lessons taught was a significant predictor of performance on the Netsilik sub-test at posttest; and 5) the percentage of sixth graders in a class was a predictor of performance on the Man and Other Animals sub-test, but not on the Netsilik sub-test (i. e., older students did better on the part of the test containing items dealing with some of the more abstract concepts of the course).

These results suggest that the Netsilik unit provided students with more new and readily understandable information than the Animals unit.

Suppose all posttest measures are considered simultaneously in relation to amount of implementation (with the implementation variables also considered simultaneously)? Would there be significant association? The answer is that there was a significant relationship. But the outcome variables that were most strongly associated with amount of implementation of MACOS were posttest attitude, not achievement variables.* Of the attitude outcomes at posttest, the most strongly associated was interest in problem-solving, followed, in descending order of strength of association, by preference for social studies, and attitudes towards unusual, hypothetical customs or beliefs and towards people or groups that would have such customs or beliefs. The MACOS test, the Interpretation of Data test, and the STEP had much weaker associations.** The results suggest

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* It should be noted that pretest measures were not included as predictors in this analysis.

** Technically, the index of association used here was the correlation of a variable with the criterion variate in a canonical correlation analysis.

that when posttest achievement and attitude outcomes were considered together, it was attitude outcomes rather than achievement outcomes that were the more likely to be influenced positively by increasing amounts of implementation of MACOS.

Relationships Among Variables

An analysis of relationships among variables shed some light on the factors affecting learning outcomes. For instance, there were relationships between what was done in classes (processes) and certain attitudes at posttest and in follow-up. There were relationships between initial characteristics of classes (input) and what was done in class (process). The following descriptions are based on analyses using principal component "scores" for sets of variables.* A principal component is a weighted composite "score" for a group of variables. For example, all the classroom process measures based on student ratings, converted to classroom averages, were combined to produce two composite scores by a method somewhat like factor analysis. Given these two principal component score equations, each class could be assigned two "scores," one for the first principal component, the other for the second. The principal components were used to examine relationships among variables (they were also used in major analyses of differences between groups). When a principal component appeared to have a significant relationship to some other variable or variables, examination was made of the individual variables that were particularly related to the principal component. Therefore, when we mention particular variables below, it will be understood

* Principal components were also used as covariates in analyses of outcomes, and in analyses of initial differences among groups.

that the variables were parts of a composite score.*

Relations of Beginning Aptitude of Students and Attitudes of Teachers to Outcomes

Not surprisingly, beginning aptitude (pretest) was the most important factor in posttest results as far as achievement scores (class means) were concerned. Pretest score was not always the most important factor with posttest attitude scores (again, class means). In some cases posttest attitude scores were much more likely to be associated with variables such as teacher attitude, classroom processes, and classroom climate.

Teacher attitudes, as measured at pretest, were related to posttest class scores of attitudes toward unusual, hypothetical customs, beliefs or behavior, and toward tolerance of ambiguity in problems. There was also indication of a relationship of teacher attitude to performance on the MACOS test at posttest. In all these cases, the higher the traditionalism scores of the teacher, the poorer or less positive the posttest outcome score. The same relationship held for attitudes toward people who might have unusual beliefs or customs measured in the final follow-up, a year later.

Interestingly, the more focussed the teacher's objectives (the less the teacher tended to see a wide variety of objectives as equally important), the better the class scores on the MACOS test in the final follow-up, a year after the posttest. On the other hand, the more general the teacher, the more positive the class scores in the final follow-up on attitudes toward unusual customs or beliefs.

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* By way of illustration, the three classroom climate variables formed one composite "score," i.e., one principal component. Thus, reference is made to "climate" with the understanding that it is made up of the three scales already described: satisfaction, apathy, difficulty.

Thus, teacher attitudes did seem to influence results. But when relationships of student and teacher pretest characteristics to results were analyzed simultaneously in the MACOS and non-MACOS groups separately, it was the student aptitudes (pretest scores) that were by far the more important.

Classroom Climate

Classroom climate was significantly related to posttest performance on the STEP test, and on the measure of preference for social studies compared with other subjects. Climate was also significantly related to class average ratings at posttest of ability of self as problem-solver. A year later, classroom climate, measured the prior year, was significantly related to a measure of how well last year's classes now liked social studies per se. These relationships, however, pertained predominantly to the non-MACOS group. The invariant relationship between classroom climate and outcomes was that the better the climate, the better or more positive the outcome.

Classroom Processes (Activities and Emphases)

Composite measures of classroom process variables were significantly related to class posttest reactions to unusual, hypothetical customs, beliefs or behavior, and to persons or groups that would have such customs, beliefs or behavior. They were also significantly related to posttest attitudes of tolerance for ambiguity in problems. The following year, in October, previous classroom process measures were significantly related to opinions of classes about whether subjects or skills they had learned the year before in social studies were benefitting them in their present courses. They were also related to how interesting students from former MACOS and non-MACOS classes found their current social studies

classes, compared to their previous class.

When the two groups of classes were analyzed separately, it was found that after input had been accounted for, it was the non-MACOS group of classes in which the process and classroom climate variables showed significant relationships to the outcomes described. The finding is interesting especially since it pertains primarily to attitude outcomes. It suggests that the outcomes of the MACOS classes, taken as a group, seemed to be less affected by variations in perceived classroom processes and classroom climate than outcomes of the non-MACOS classes, taken as a group. This, of course, does not apply to any specific non-MACOS class or curriculum; only to all considered together. Nor does it apply, by the same token, to any particular MACOS class; only to the MACOS classes taken as a group.

One should not conclude that classroom processes or classroom climate were of no importance at all in the outcomes of MACOS classes. For example, analyses of relationships of process and climate variables considered simultaneously suggested, for the MACOS classes, that the perception of the class as informal, without stress on grades or tests, and without emphasis on particular forms of activity such as remembering facts, putting things in your own words, always giving good reasons, and the like, were important factors in some follow-up attitude and achievement outcomes. It was also important if the teacher did not perceive the curriculum as emphasizing knowing, remembering and individual work.

The important elements in the classes in this study appeared to be 1) teachers who tended to hold traditional views of education, and who felt their curriculum

emphasized basic cognitive objectives, and 2) classes that were perceived by students as having relatively little opportunity for discussion, little emphasis on comparing things, little emphasis on interpreting what things seem to mean, and little emphasis on evaluating (trying to decide what is right or wrong, good or bad). These combinations were apt to be related to outcomes, particularly to poorer attitude outcomes, at posttest and in follow-ups. The relationships appeared stronger in the group of non-MACOS than MACOS classes.

Factors Related to Good Classroom Climate

Suppose one regards classroom climate as an outcome? What prior factors seemed to influence it? Generally, classroom climate was related to the attitudes or orientations of teachers, and to how students perceived the emphases and activities of their classes. The lower teachers scored on a measure of traditionalism and on approval of controlling behavior, the better the climate. The less the class was perceived by students as traditional (emphasis on grades, right answers, facts, individual work), the better the climate. Classroom climate was not related to pretest achievement levels of classes. There was a relationship with pretest attitude. The more a class at the outset perceived itself as interested in problem-solving, and as creative, the less difficult the course was perceived at midyear. Classroom climate did not appear particularly related to the demographic characteristics of classes.

Relationships of Initial Characteristics of Classes to Subsequent Processes and Climate

There was indication that initial characteristics of classes were related to classroom processes (what was done, and how) and classroom climate. The

relationships were somewhat different in the MACOS and non-MACOS groups. In the non-MACOS group, the better the scores of the class in achievement and attitude at pretest, and the lower the score of the teacher on traditionalism measures, the less the teacher tended to indicate that the curriculum emphasized lower order objectives (e.g., remembering, comprehension). There was some indication that classes were also perceived by students as tending to be informal, without stress on grades. There was also a strong relationship of good classroom climate to such a pattern.

In the MACOS group, the older and more affluent the class, the younger the teacher (or more specifically, the less total teaching experience), and the lower the teacher's scores on traditionalism measures, then: the more the class was perceived as informal and not stressing grades, the less it was perceived as emphasizing traditional activities, the more the teachers indicated the curriculum emphasized affective and higher-order cognitive objectives, and the better the classroom climate. Pretest achievement levels of classes bore some relationship to processes; pretest attitude measures had little or no relationship, on the whole. Again it should be remembered that these relationships in both groups pertain to the groups of classes, not to any specific class.

The interpretation offered here is that teachers who used MACOS with older, more affluent classes were better able to establish classes that were perceived by students in ways that were consistent with the 'community of learning' thrust of MACOS. Furthermore, the MACOS teachers' perceptions of emphases and activities tended to be more consistent with those of students than was the case in the non-MACOS group. The relationships were less clear in the

non-MACOS group, very possibly because of the diversity of curricula. In both groups, it appeared important that the teacher not have a traditionalist attitude, certainly if good classroom climate was desired.

To summarize, there were relationships of achievement and attitude measures (outcomes), at posttest and in follow-up, to what went on in classes (processes) and to climate. The relationships of processes and classroom climate were stronger with attitude than with achievement measures. For example, attitudes of students toward social studies were more strongly related to classroom climate than were the various achievement measures. While there were differences in process and climate measures between classes within the MACOS group (as well as within the non-MACOS group), the outcomes of non-MACOS classes generally showed a stronger relationship to variations in processes and climate than the MACOS classes. The attitude or orientation of the teacher was important in both groups. Lower traditionalism scores went along with more positive perceptions and attitudes by students. There was indication that the same types of emphases and class activities were apt to be perceived differently (and more positively) in the MACOS classes than in the non-MACOS classes.

TEACHERS

Demographic Characteristics

As groups, the MACOS and non-MACOS teachers were similar (according to data provided by them on a background form) in a number of characteristics, although the MACOS group had more male teachers (47%) than the non-MACOS group (35%). All but three teachers were white. One teacher in each group was black, and one MACOS teacher was oriental. The median age of the MACOS teachers was 29, of the non-MACOS teachers, 28. Six percent of the MACOS teachers were over 50; 10% of the non-MACOS teachers were. Thirteen percent of the MACOS teachers, and 24% of the non-MACOS teachers, identified with an ethnic minority. Seventy-six percent of the MACOS teachers and 67% of the non-MACOS teachers held Bachelor's degrees; 9% of MACOS and 12% of non-MACOS teachers held a Master of Arts in Teaching; 19% of MACOS and 18% of non-MACOS teachers held other master's degrees.

MACOS teachers had an average of 9 years teaching experience (range: 0-33); non-MACOS teachers had an average of 10 years experience (range: 1-40). Both groups had taught in their present school districts an average of 6-7 years. Both groups had taught their present program an average of about $2\frac{1}{2}$ years. However, the range of years' experience was much different (MACOS had only recently been developed): MACOS, 0-4; non-MACOS, 0-16.

Eighty-three percent of the MACOS teachers and 75% of the non-MACOS teachers had had a social studies methods course before becoming teachers of record. Sixty-seven percent of the MACOS teachers and 48% of the non-MACOS

teachers had some form of in-service training in teaching social studies. The great majority of teachers in both groups, when interviewed in February, indicated they were neither receiving nor giving social studies related training during the year of this study.

Forty-three percent of the MACOS teachers, and 60% of the non-MACOS ones, were in self-contained classes. About 45% MACOS and 38% non-MACOS teachers were involved in team-teaching. Twenty-eight percent of the MACOS teachers and 13% non-MACOS indicated they were involved in an open-space arrangement. Fifteen percent of the MACOS teachers and 23% of the non-MACOS teachers indicated they were in a departmentalized situation.

When asked to state the one subject they most preferred to teach, 21% of the MACOS and 22% of the non-MACOS teachers said social studies. Twenty-three percent and 20% of the two groups respectively listed math or science. Twenty-eight and 30% respectively listed combinations of subjects, some of which included social studies.

Who or What Influenced Teachers Most With Respect to Teaching Social Studies?

During the second interview with teachers, teachers were asked what person or experience had had the greatest influence on their ideas about what social studies is and how to teach it. Some teachers mentioned several sources, but only the first was tallied. The most frequent source mentioned by MACOS teachers (31%) was the MACOS summer institute, workshop, or in-service training. The most frequently mentioned source by non-MACOS teachers (44%) was their own personal experience (no particular source stood out). Ten percent

of the MACOS teachers and 30% of the non-MACOS teachers cited a professor or course(s) in college or graduate school. Other sources mentioned by members of both groups were: teaching a particular program (MACOS, Holt Data Bank, Taba, etc.); and team members, colleagues, other persons in the school system. A few teachers mentioned a former high school teacher. A few mentioned books they had read (e.g., Glasser's Schools Without Failure; various social studies texts and series). No teacher mentioned the professional journals, although that does not mean they did not read them or were not influenced by them.

Teachers in both groups who mentioned a source of important influence other than their own experience were likely to indicate that the influence was in the direction of more openness, with more concern for concepts and relationships than with facts and dates. In both groups, regardless of the source mentioned, the described change was often linked to ways of making subjects interesting to students, getting subjects to come alive, and getting students to see the relevance of what they were learning to themselves and to the world around them.

Problems Confronted By Teachers

Were problems faced by teachers in the two groups different? How changeable were programs in the two groups? Teachers were asked in the first interview (November/December) what they found to be the most difficult problem they had had to deal with in teaching social studies at their particular grade level. The two most frequently cited problems by MACOS and non-MACOS teachers had to do with lack of student interest (32% MACOS, 51% non-MACOS), and the wide range of abilities of students (32% MACOS, 24% non-MACOS). The first category had to do with lack of interest per se, or because students could not see the

relevance of social studies to their own lives, or with lack of interest because the materials, terms, concepts, etc. were too difficult or abstract. The second category included such problems as the wide range of developmental levels, maturity, work skills, listening skills, ability to participate in discussions, ability to work together in small groups, and the like. Other less frequently mentioned problems by teachers in both groups were: reading and writing skills, discipline, quantity or quality of available materials, lack of continuity of program at earlier grade levels, low priority given to social studies, and lack of clear social studies goals. Both groups also mentioned problems not as readily categorized as the above.

The most prevalent solution offered by both groups of teachers focussed on the quality of the program (simpler, more interesting materials; more field trips; more tie-ins to the needs and interests of students).

Overall, there appeared to be little difference in the kinds of problems teachers from either group described as particularly difficult. Some teachers, of course, said they could think of no particularly difficult problem.

Non-MACOS teachers, somewhat more than MACOS teachers, were likely to have made what they considered important changes in their programs from the preceding year. And non-MACOS teachers, much more than MACOS teachers, were likely to have changed or modified their present program by November/December from what they had planned at the beginning (59%, compared to 33%). The kinds of changes and the reasons for making them, however, were generally similar in both groups, if changes were made at all.

When interviewed the second time (February/March), the majority of teachers in both groups were very pleased with how their programs were going. A number of teachers in both groups, however, said they were behind where they had hoped to be by that time. A few teachers in both groups mentioned the lack of adequate time for social studies as the problem. Several MACOS teachers felt the Man and Other Animals unit was too long, and a few teachers felt the course was not providing sufficient opportunities for students to develop basic study skills, or map and geography skills. MACOS teachers were a little more likely than non-MACOS teachers to mention problems with group discussions, or with getting adequate student involvement in group processes. Two MACOS teachers had dropped the course due to lack of student response. Non-MACOS teachers were more likely than MACOS teachers to mention problems with availability of suitable materials.

In sum, teachers teaching MACOS in whole or in part were, by definition, working with a different teaching situation from teachers teaching the variety of other programs called non-MACOS in this study. According to their descriptions, however, they found themselves dealing with instructional problems no different, on the whole, from the non-MACOS teachers. They were less likely, as a group, to have made changes in their programs, according to what was said about changes by both groups in interviews. When they did make changes in their programs, it was for reasons similar to those of other teachers: response to students' needs; changes in school personnel or organization; breakdown or unavailability of equipment, other reasons. As noted before, variation in

implementation and adaptation was a striking feature of the MACOS program in this study. Considering the much greater percentage of non-MACOS teachers reporting changes they had made or were making in their plans, the same condition of variation and adaptation was obviously the case for many of the non-MACOS programs as well.

Linkages, Communications, and Continuities: School Contexts

Were there differences between MACOS and non-MACOS courses in their relationships to the rest of the school program? Several aspects of interrelationships in schools were explored through interviews with teachers.

The great majority of teachers (76-87%) in both groups believed that the attitude and skills goals that they described for their social studies programs were being reinforced in other parts of the school program. Teachers in self-contained classes indicated that they tried to reinforce attitude and skills goals in other subjects they taught. Various courses or programs mentioned by teachers (not just in self-contained classes) as reinforcing the same attitudes and skills in varying degrees included art, reading, spelling, language arts, math, science, Magic Circle, Inside-Out, physical education, and having older students work with younger students. Approximately 45% of the teachers in both groups felt that other parts of the school program were apt to cover, at least in some respects, the same concepts, knowledge or other content as the social studies program. Descriptions of similarities of content, however, tended to be restricted and lacking in specificity.

There were variations from school to school, or class to class, in the

degree and specificity of overlap of social studies and other parts of the school program with respect to goals concerned with attitudes, skills, and (especially) content. Nevertheless, there was sufficient indication of overlap described by teachers to suggest that evaluations of particular social studies classes and programs need to take seriously the overall school context.

Nearly all teachers in both groups said, at posttest, that they had discussed their social studies program during the year with another teacher (or teachers). Predominantly, the intercommunications of teachers in both groups about social studies were with teachers at the same grade levels (fifth and sixth grades). There was some interaction with teachers at lower grade levels; relatively few teachers said they had talked about social studies with seventh or eighth grade teachers, who, for the schools in this study, were in separate, junior high school buildings. The conclusion drawn here is that the prevailing patterns of communications among teachers about social studies in both groups were among teachers at the same grade levels. That pattern undoubtedly had implications for the continuity and cumulative effects of social studies instruction, although it was beyond the scope of this study to attempt to trace them.

Teachers' perceptions of similarities and differences of social studies programs in lower and higher grades to their own program were sought in posttest interviews. Teachers were asked about the similarities and differences of their present students' program, compared to what those students had had the prior two years or would face in the next two years in social studies. Twenty-five percent of the MACOS teachers, and 18% of the non-MACOS teachers said

they really did not know of, or could not think of, similarities with what their students had done in the past. Eighteen and 11% of the teachers in the two respective groups did not know of, or could not think of, differences. Thirty-one percent of the MACOS teachers, and 40% of the non-MACOS teachers did not know of, or could not think of, similarities or differences between what their students were doing now in social studies, and what those students would be doing in the next two years. Not surprisingly, sixth grade teachers were more likely to say they did not know than fifth grade teachers, since the sixth grade students would be going to another school. In some cases, fifth grade teachers could not comment because they knew there was going to be a different program the following year, but it was not yet final.

The predominant difference in students' past programs cited by teachers was subject matter; the same was true also for future differences cited. With respect to past and future differences in programs, MACOS teachers were more likely than non-MACOS teachers to mention a different teaching approach or strategy. Other past and future similarities and differences cited by teachers in both groups included same (or different) textbook or series, skills, and focus on attitudes. Generally, descriptions of these tended to be broad and impressionistic.

Another channel of linkage and intercommunications of social studies comes through principals, and social studies supervisors, or other instructional supervisors, directors or resource persons. Most MACOS teachers (60%), at posttest, said the principal had observed the class at least once during the year; 49% of the non-MACOS teachers also said their classes had been observed by the

principal. Less than 20% of the teachers in both groups said their classes had been observed by anyone from central administration. The majority of teachers in both groups (62 and 68%) said they had talked with the principal about their social studies program during the year. Thirty-five percent of the MACOS teachers, and 28% of the non-MACOS teachers, said they had talked with at least one person from central administration about social studies during the year.

At least a third of the non-MACOS teachers, and nearly half the MACOS teachers interviewed at posttest indicated they had had some reaction or comments about their social studies program from parents or members of the community. Most feedback, questions, or comments came during parent/teacher conferences. Most comments or reactions described by both groups were positive. Some MACOS teachers had questions from parents stemming from critical commentaries appearing in the newspapers. In both groups, negative reactions were apt to focus on concern over students' knowledge (or lack of it) of American history (with the Bicentennial approaching).

How Teachers Felt About the Adequacy of This Study

This study will be judged by various audiences according to their interests and criteria. It is of interest to ask: what did the teachers involved in it think? They were asked at posttest, what effects the study had had on them or their students, and also whether they felt we had observed (in one form or another) the significant features or important aspects of their program. Some described positive effects (e.g., the students liked the special attention; the teacher gave more thought to what he or she was trying to do in social studies). Some described

negative effects (e.g., the students hated the tests; the teacher found the forms unduly time-consuming; scheduling was time-consuming; tests and interviews cut into class time). Some cited both positive and negative effects. Some (20-30%) said they could think of no effects, positive or negative.

Non-MACOS teachers, far more than MACOS teachers (69%, compared to 43%), felt the study had picked up, in one form or another, the significant or important aspects of their program during the year. Those teachers in both groups who felt the study missed significant or important aspects described them in similar terms. The descriptions seemed principally to fall into three main categories. First, some teachers felt we missed general classroom interactions, exciting discussions, unpredictable but indicative exchanges between students or statements that were made, and the like. In effect, they felt we missed significant discussions and classroom interactions. Second, some teachers cited particular things done, such as certain projects, events, plays, international festivals, games, class court or government. Finally, some teachers simply noted that we did not really observe the class at all. Those teachers often indicated they had in mind observations and evaluations of how they conducted lessons, and handled problems.

The comments made by those teachers were quite literally correct. With the exception of one class period, the features described were not observed directly. We learned of many of the aspects or features they described, but from secondary sources: students, and the teachers themselves. It is nevertheless hoped that teachers and others will find what was learned useful, as it is summarized here and described in detail in the full report.

CONCLUDING REMARKS

The preceding summary has included interpretations and conclusions throughout wherever those appeared warranted. They have been stated with reference to designated topics. Rather than list them again, we believe a few concluding remarks, reflecting our own overall conclusions, are appropriate. These remarks do not cover all points made or implied in the foregoing summary. They are intended to encapsulate what seemed to us to be salient results and implications of the study.

MACOS clearly interested a large number and variety of students. It was also clear that they learned and remembered much that they otherwise would not have learned. The factual content of the course, and the materials, were often mentioned by students, after the course, as something they missed. MACOS classes were more likely than non-MACOS classes to find their next year's social studies class less interesting, by comparison.

It was also clear that most MACOS teachers in the study liked the program. Some had problems with it with the particular classes they found themselves teaching, but the overall impression given was very positive. Teachers typically, in this study, felt free to supplement it with other lessons, units or programs. Indeed, variation in use of MACOS was the prevailing adaptation.

The results of this study, however, suggest that the course was more effective with older students (in this case, with sixth graders, compared

to fifth graders). The overall results also seemed more modest than the designers might have hoped. The course has broad goals that of course are difficult to define and measure precisely. By the methods employed in this study, we found no systematic advantage of MACOS, compared to the non-MACOS group of classes, in the development of inquiry skills, in the development of interest in open-ended problems (a tolerance for ambiguity), in interest in problem-solving, or in increased confidence in ability to solve problems. All of these may have occurred with individuals. We failed to find evidence of them in the group of classes as a whole.

MACOS classes, on the average, did tend to stimulate significantly more positive reactions than non-MACOS classes, on the average, to unusual, hypothetical customs, beliefs or behavior, though not towards people or groups that might have such customs, beliefs or behavior. If responses to questions on a pencil and paper instrument are at all indicative of social attitudes, MACOS, as implemented in the classes in this study did seem to have a positive, but temporary, effect. More positive attitudes were associated with greater amounts of implementation of the curriculum.

MACOS did seem to support a form of pedagogy consistent with the designers' intentions. It did so more effectively, on the average, with older, more affluent classes (that is, classes with lower percentages of low-income children). We found it interesting, however, that overall, the outcomes of MACOS classes, particularly attitude outcomes at the end of the

course and subsequently the following year, were less sensitive or related to how students viewed the course and how it was implemented than in the non-MACOS classes. With respect to attitudes particularly, but also achievement, MACOS appeared to provide more leeway for a range of teacher attitudes and teaching strategies than the non-MACOS group of courses, taken as a whole. But in both groups, the data of this study suggested that variations in the attitudes of teachers, and in classroom emphases and activities had a greater impact on attitudes of students than on achievement. In this context, it was of interest to note in the MACOS group of classes that when achievement and attitude outcomes were considered together, it was attitudes more than achievement that were affected by increasing amounts of implementation.

A final comment concerns reactions of students to vivid or disturbing material, issues or other content. Both MACOS and non-MACOS groups of classes read about, saw, and discussed topics or situations that were vivid and which evoked strong reactions in students, more so in fifth than sixth graders. It appeared from the data of this study that what was particularly likely to evoke strong reactions was whatever appeared to be cruel, exploitative or unfair. Students could understand unusual customs or preferences, and even see reasons for them. MACOS students were apt to react strongly, at least at first, to the Netsiliks' eating preferences and habits. But it was their treatment of animals, and the way animals were killed, that students were likely to disapprove. Social studies, perhaps more than other subject areas, may tap important issues and evoke strong reactions, at least temporarily. That happened in both groups of classes in this study.

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